EPI-LOG

Communicable Disease and Epidemiology News
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West Nile Virus 2004: Update for Health Care Providers

West Nile virus (WNV) is a flavivirus related to Japanese encephalitis and St. Louis encephalitis viruses that affects humans, horses, birds, and other vertebrates. The clinical presentation cannot reliably be distinguished from other causes of viral encephalitis. In fall 2002, WNV was detected in a crow, a raven, and two horses in Washington State. There is currently significant WNV activity in California and the disease may occur locally this summer. The following information summarizes the clinical manifestations, diagnosis and laboratory testing, and reporting for WNV infections in King County.

General Information: WNV is transmitted by the bite of one of a number of mosquito species (primarily *Culex* species in Washington) that become infected after feeding on birds carrying WNV. It is not transmitted person-to-person, or to humans directly from dead or living animals other than mosquitoes, with the following exceptions. WNV can be transmitted via body fluids, and in 2002, transfusion of blood products, organ transplantation, transplacental transmission, and trasmission via breast milk were identified as potential routes of infection with WNV. Two cases of blood product associated trasmission, one case of transplacental transmission, and one case of transmission via breast-milk have been reported.

Clinical presentations: WNV infection should be considered in persons of all ages (particularly between May and November) with unexplained encephalitis, aseptic meningitis, acute flaccid paralysis, presumed Guillain-Barré Syndrome, or other neurological presentations described below. Because WNV transmission can occur year-round in some areas, obtaining a recent travel history is always important.

Most WNV infections are mild or clinically unapparent. Approximately 20% of infected persons develop West Nile fever, a less severe form of infection. The incubation period is thought to range from 3 to 14 days, and symptoms last 3 to 6 days or longer. Symptoms of West Nile fever may include fever, malaise, anorexia, nausea, vomiting, eye pain, headache, body aches, skin rash, and swollen lymph glands.

Approximately 1 in 150 infections cause the more severe neurological forms of disease including encephalitis and meningitis. Neuro-invasive disease is associated with a range of neurologic and systemic manifestations including headache, high fever, gastrointestinal symptoms, neck stiffness, stupor, disorientation, cranial nerve abnormalities, ataxia, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. Case-fatality rates for hospitalized patients range from 3% to 15% and are highest in the elderly. **Neuromuscular weakness in persons with a viral meningoencephalitis syndrome is suggestive of WNV infection**. Other neurological presentations include acute flaccid paralysis (which may present without meningitis or encephalitis), ataxia and extrapyramidal signs, tremor and Parkinson-like syndrome, cranial nerve abnormalities, myelitis, optic neuritis, polyradiculitis, and seizures.

How Do I Report a Suspect Case of West Nile Virus?

Health care providers can report West Nile Virus cases to Public Health by calling (206) 296-4774 within 3 work days, or by filling out a "Arborviral Encephalitis/Meningitis Case Report Form" and faxing it to (206) 296-4803. This form can be found at: http://www.metrokc.gov/health/westnile/forms.htm

What Cases Should be Reported?

1) **Viral encephalitis**, a clinical diagnosis characterized by:
   a) Fever ≥38°C or 100°F and
   b) Central nervous system signs may include altered mental status (altered level of consciousness, confusion, agitation, or lethargy), coma, or other cortical signs (cranial nerve palsies; paresis or paralysis, or seizures), and
   c) Abnormal cerebrospinal fluid (CSF) profile suggestive of viral etiology (negative bacterial stain and culture, CSF pleocytosis and/or moderately elevated protein).
2) **Aseptic meningitis occurring from May through November in any patient ≥18 years of age**. Aseptic meningitis is characterized by:
   a) Fever ≥38°C or 100°F and
   b) Signs of meningeal inflammation (stiff neck, headache, photophobia) and
   c) Abnormal CSF profile suggestive of viral etiology.
3) **Acute flaccid paralysis or presumed Guillain-Barrè syndrome,** even in the absence of fever and other neurologic symptoms.
4) **Suspected West Nile virus infection** in:
   a) Patients with a history of recent blood donation or transfusion, or organ transplant recipients
   b) Patients with laboratory, occupational, transplacental, or breastfeeding associated exposures
   c) Pregnant women
5) **West Nile fever** in patients with positive commercial laboratory test results.

There is no vaccine or specific therapy for WNV in humans. In severe cases, intensive supportive therapy is indicated including hospitalization, intravenous fluids, airway management, respiratory support, prevention of secondary infections and good nursing care.

Laboratory Diagnosis
The most efficient method for diagnosis of WNV is through detection of IgM antibody to WNV in serum collected 8-14 days after illness onset, or in CSF collected within 8 days of illness onset, using the IgM antibody capture enzyme-linked immunosorbent assay (MAC-ELISA).

How Do I Submit Laboratory Specimens for West Nile Virus Testing?

1) **First, report the case to Public Health** (see box above: "How Do I Report a Suspect Case of West Nile Virus?")
2) **MAC-ELISA testing** is available at the Washington State Public Health Laboratory for hospitalized patients suspected of having West Nile Virus infection *after reporting and consultation with Public Health* (206) 296-4774. Commercial laboratory testing is available for suspect West Nile Virus cases who are not hospitalized (and persons <18 hospitalized with aseptic meningitis).
3) **Submit 1 ml of CSF and/or separated serum** (not whole blood) for MAC-ELISA testing. Specimens should be refrigerated and transported cold. Frozen CSF is acceptable.
4) **Submit specimens with a completed "Virus Examinations" form** (http://www.metrokc.gov/health/westnile/index.htm) to the Public Health-Seattle & King County Lab at 325 9th Ave, Room BWC03 in Seattle (206) 731-8950**.**

Because WNV cannot be distinguished from other causes of meningoencephalitis on clinical grounds, concurrent testing for other common causes of aseptic meningitis/encephalitis syndrome, (including cultures and/or PCR testing for enteroviruses and herpes viruses) is encouraged.

Test Interpretation: IgM antibody develops by day 8 and IgG antibody within 3 weeks after illness onset. When indicated, convalescent serum specimens should be drawn about 3-4 weeks after acute specimens. Negative results on any specimen obtained <8 days after onset of illness should be considered inconclusive and a convalescent serum specimen, obtained at least 2 weeks after the first specimen, is needed to make a final determination. Cross-reactions may occur among patients who have had yellow fever, Japanese encephalitis vaccination, a previous history of arboviral encephalitis, or dengue fever.

For complete information on WNV, see the Public Health – Seattle & King County WNV web site: http://www.metrokc.gov/health/westnile/

Rabies Information and Resources for Health Care Providers Now on the Web!
New rabies resources and information for health care providers have been posted to our web site. The site includes the manual, "**Clinical Assessment and Management of Potential Rabies Exposures in King County**", containing background on rabies in Washington State, important telephone numbers for animal and human rabies management, principles of rabies post-exposure management, information on reporting bites to animal control and public health, **and interactive decision trees for assessing the need for rabies exposures and post-exposure prophylaxis**. This information should be useful to all healthcare providers who evaluate and manage patients with possible rabies exposures, including bat exposures and animal bites.

The rabies information is available at: http://www.metrokc.gov/health/providers/epidemiology/rabies/index.htm.

Disease Reporting

AIDS/HIV ..... (206) 296-4645
STDs ..... (206) 731-3954
TB (206) 731-4579
All Other Notifiable Communicable Diseases (24 hours a day) .... (206) 296-4774
Automated reporting line for conditions not immediately notifiable ..... (206) 296-4782

Hotlines

Communicable Disease ..... (206) 296-4949
HIV/STD ..... (206) 205-STDS

Online Resources

Public Health Home Page: www.metrokc.gov/health/
The *EPI-LOG*: www.metrokc.gov/health/providers
Subscribe to the Public Health Communicable Disease listserv (PHSKC INFO-X) at:
http://mailman.u.washington.edu/mailman/listinfo/phskc-info-x

Reported Cases of Selected Diseases, Seattle & King County 2004

	Cases Reported in May		Cases Reported Through May	
	2004	2003	2004	2003
Campylobacteriosis	21	26	90	90
Cryptosporidiosis	1	4	11	16
Chlamydial infections	468	393	2055	1987
Enterohemorrhagic *E. coli* (non-O157)	0	0	0	0
***E. coli* O157: H7**	6	1	9	11
Giardiasis	9	12	51	46
Gonorrhea	95	119	472	605
***Haemophilus influenzae* (cases <6 years of age)**	0	0	2	0
Hepatitis A	0	4	3	15
Hepatitis B (acute)	1	1	13	15
Hepatitis B (chronic)	66	60	276	261
Hepatitis C (acute)	0	0	6	5
Hepatitis C (chronic, confirmed/probable)	122	79	570	459
Hepatitis C (chronic, possible)	28	11	160	105
Herpes, genital (primary)	86	54	294	274
HIV and AIDS (includes only AIDS cases not previously reported as HIV)	27	51	182	183
Measles	0	0	6	0
Meningococcal Disease	1	0	9	3
Mumps	0	0	0	0
Pertussis	19	24	102	91
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	16	23	77	89
Shigellosis	3	2	30	52
Syphilis	7	7	36	35
Syphilis, congenital	0	0	0	0
Syphilis, late	8	4	33	20
Tuberculosis	6	14	48	67

The *Epi-Log* is available in alternate formats upon request.

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